PHYSICAL ACTIVITY LEVELS AFTER THE TREATMENT FOR BREAST CANCER: ONE YEAR FOLLOW-UP

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Background and purpose

Because there are an increasing number of breast cancer survivors, a high quality of life and hence a high physical activity level becomes more and more important (Alfano et al 2007). In addition, patient's high activity levels are associated with 30% decreased risk of mortality after breast cancer (Patterson et al 2010). Few studies have examined the pattern of change of physical activity levels over time among patients with breast cancer or the predictive factors for a decreased activity level one year after the surgery.

The first aim of our study was to investigate the evolution of the total activity level and the occupational, sport and household activity levels, preoperatively to twelve months after surgery. The second aim was to find predictive factors for changes in these activity levels between the preoperative and twelve months post-operative stages.

Patients and methods

Patients with a primary breast cancer (N=267) filled in the Flemish Physical Activity Computerised Questionnaire (FPACQ) before the breast surgery and one, three, six and twelve months after the surgery.

The FPACQ is a reliable and valid questionnaire (Matton et al 2007) and collects information about the occupational, sport and household activities. Activity levels are calculated as the product of the number of hours per week spent on an activity and the intensity of that activity (MET-hours/ week). One MET is considered as the resting metabolic rate during quiet sitting.

Patient-related factors including age, Body Mass Index, having a spouse, educational level, employment status, smoking behaviour and presence of lymphoedema and impaired shoulder mobility were collected. We registered breast cancer-related factors such as tumour stage, lymph node stage and type of breast cancer, and treatment-related factors such as type of breast surgery, surgery at the dominant side, type of axillary surgery, the number of lymph nodes dissected, chemotherapy, radiotherapy and hormonal therapy.

A linear model for repeated measures was used to evaluate the evolution of the total, occupational, sport and household activity levels from before to twelve months after surgery. To analyse the predictive factors for changes in activity levels multi-variable analyses were performed with General Linear Models.

Results

The age of the patients ranged between 21 and 90 years (mean: 55 year). Mean Body Mass index was 25.1 (± 4.4) kg/ m². Fifty-nine percent of patients received an axillary dissection, the other patients a sentinel biopsy, 87% radiotherapy and 50% chemotherapy.

Total physical activity level decreased significantly by 28 MET-hours/week the first month after the surgery and by 25 and 21 MET-hours/ week at 3 and 6 months (compared with the preoperative level of 270 MET-hours/ week). At 12 months the total activity level was still significantly decreased with 13 MET-hours/ week ($p<0.01$). Figure 1 shows the evolution of the occupational, sport and household activity levels from before, to twelve months after, surgery.

Being employed was a significant predictive factor for a higher decrease of the total activity level between the preoperative stage and twelve months after surgery ($p=0.02$). Predictive factors for a higher decrease of the occupational activity level were having a spouse ($p=0.03$), N2 or N3 lymph node stage ($p=0.03$) or more than 20 lymph nodes dissected ($p=0.03$). A predictive factor for a decreased sport activity level was an older age ($p<0.01$) and for a decreased household activity level, was having no spouse ($p=0.03$).

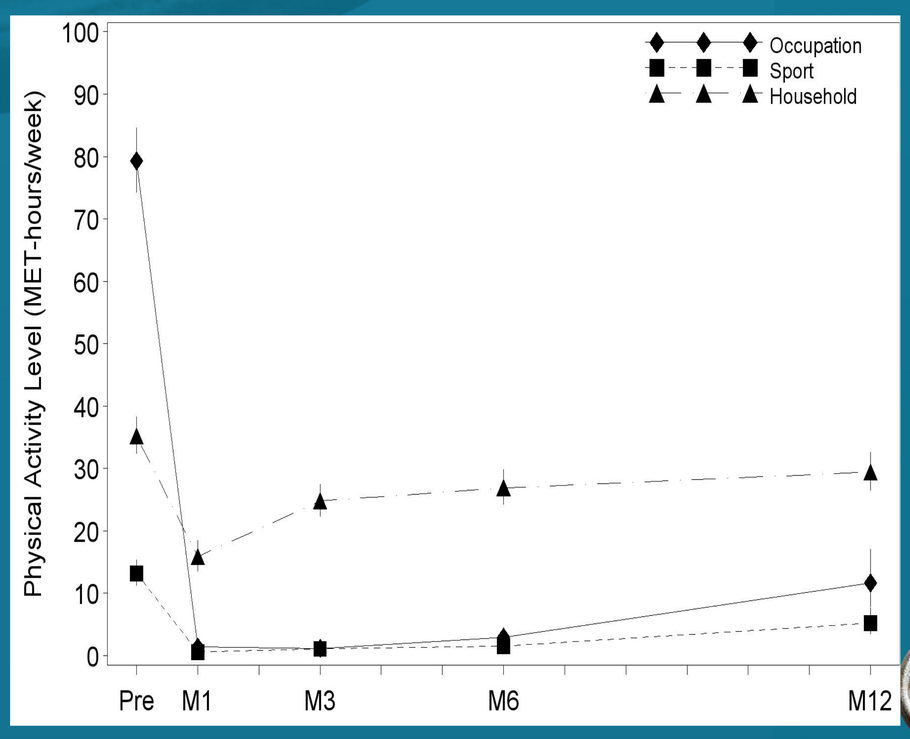

Figure 1. Evolution of occupational, sport and household activity levels from the preoperative stage to one, three, six and twelve months after the surgery

Conclusion

This study showed that one year after the breast cancer surgery, physical activity levels were still significantly lower than before the surgery. Breast cancer patients, and in particular those at risk for a decreased physical activity level, should be identified and encouraged to increase their activities.

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